CLAIM CHART

Claim Language	Support in Pending Application
1. A transistor comprising:	The present invention relates to a method of obtaining... (thin film transistor or TFT) (page 1, lines 5-8); The TFT . . .was fabricated through the process described above. (page 7, line 32 – page 8, line 1)
a metal advanced lateral crystallization region	"forming regions containing at least one of nickel,... so that they adhere on part of the impurity regions, and by annealing the whole to crystallize it starting from the region containing nickel" (page 2, lines 8-11). "advancing the crystallization of the source and drain at the same time as the crystallization of the active layer (channel forming region)." (page 2, lines 15-17). "The crystal silicon which expands thus from a specific location has a structure close to a monocrystal having good continuous crystallinity." (page 3, lines 23-25). "[T]he crystal grew in the horizontal direction from the region into which nickel was introduced (the region contacting with an oxide film 51) to the region into which no nickel was introduced." (page 14, line 30 – page 15, line 1). "[C]rystal growth in the horizontal direction." (page 16, line 3). "[T]he present invention allows control of the direction of crystal growth." (page 18, lines 7-8). "[T]he crystals are grown in the transverse direction with the surface of the substrate" (page 24, lines 2-3).
formed on a substrate	substrate . . . 10 (page 6, line 11).
with a semiconductor material	title; "an amorphous silicon film" (page 6, line 12)
and including a channel region; and	"channel forming region (the semiconductor region under the gate) electrode" (page 8, lines 8-9) (Fig. 1)
a plurality of metal advanced crystallization regions formed on sides of the metal advanced lateral crystallization region with a semiconductor material,	"[H]oles were created on the silicon oxide file 13 on the impurity regions to form nickel silicide (or nickel) films 17A and 17B . . . Then annealing was carried out . . to crystallize the impurity regions 16 and other semiconductor

	regions." (Fig. 1; page 7 lines 16-22).
wherein at least one boundary between the metal advanced lateral crystallization region and one of the metal advanced crystallization regions is located outside the channel region.	"[T]he present invention allows substantial elimination of the grain boundary between the source and drain and the active layer... by advancing the crystallization of the source and drain at the same time as crystallization of the active layer (channel forming region)." (page 2, lines 12-17); "According to the present invention,... the region of the crystal silicon is expanded away therefrom as the starting point." (page 3, lines 13-18); "crystal growth advances from both ends of the island semiconductor region and finishes around the middle thereof. Accordingly, no grain boundary was produced in the channel forming region" (page 9, lines 15-19; Fig. 1 and 2(b)).
2. The transistor according to claim 1, wherein the metal advanced lateral crystallization region	Claim 1.
include (sic) impurity doped regions	[A]n impurity was introduced by a plasma doping method. . . . Impurity regions 16A and 16B were thus formed. (page 7, lines 10-15, Figure 1B).
formed on sides of the channel region.	"[H]oles were created on the silicon oxide file 13 on the impurity regions to form nickel silicide (or nickel) films 17A and 17B . . . Then annealing was carried out . . to crystallize the impurity regions 16 and other semiconductor regions." (Fig. 1; page 7 lines 16-22).
3. The transistor of claim 1, wherein the metal advanced lateral crystallization region	Claim 1.
includes source and drain regions.	"advancing the crystallization of the source and drain at the same time as the crystallization of the active layer (channel forming region)." (page 2, lines 15-17.)
4. The transistor of claim 1, wherein the metal advanced lateral crystallization region includes no dopant portions formed on sides of the channel region.	"The impurity regions and the gate electrode were offset as seen in the figure." (page 7, lines 15-16; Figures 1B; 3B; 3C; 4)
5. A transistor comprising:	The present invention relates to a method of obtaining... (thin film transistor or TFT) (page 1, lines 5-8); The TFT . . .was fabricated

	through the process described above. (page 7, line 32 – page 8, line 1)
a channel region;	"channel forming region (the semiconductor region under the gate) electrode" (page 8, lines 8-9) (Fig. 1)
a source region	"the source" (page 8, line 7).
having a first source portion adjacent to the channel region and a second source portion adjacent to the first source portion;	"[A] film or the like containing a simple substance of nickel . . .is adhered to the impurity regions . . . and the region of the crystal silicon is expanded away therefrom as the starting point." (page 3, lines 13-18). As shown in Fig. 1B, the nickel silicide films 17A and 17B only cover the outer portion of the impurity regions 16A and 16B. "crystal growth advances from both ends of the island semiconductor region and finishes around the middle thereof. Accordingly, no grain boundary was produced in the channel forming region" (page 9, lines 15-19; Fig. 1 and 2(b)). Thus, any "grain boundary" exists in the source portion and defines the first source portion and the second source portion.
and a drain region having a first drain portion adjacent to the channel region and a second drain portion adjacent to the first drain portion;	"[A] film or the like containing a simple substance of nickel . . .is adhered to the impurity regions . . . and the region of the crystal silicon is expanded away therefrom as the starting point." (page 3, lines 13-18). As shown in Fig. 1B, the nickel silicide films 17A and 17B only cover the outer portion of the impurity regions 16A and 16B. "crystal growth advances from both ends of the island semiconductor region and finishes around the middle thereof. Accordingly, no grain boundary was produced in the channel forming region" (page 9, lines 15-19; Fig. 1 and 2(b)). Thus, any "grain boundary" exists in the drain portion and defines the first drain portion and the second drain portion.
wherein the channel region and at least one of the first source portion and the first drain portion comprise a metal advanced lateral crystallization region.	"[T]heir direction of crystallization is the same. (page 8, lines 9-10) "advancing the crystallization of the source and drain at the same time as the crystallization of the active

	layer (channel forming region)." (page 2, lines 15-17.) "The crystal silicon which expands thus from a specific location has a structure close to a monocrystal having good continuous crystallinity." (page 3, lines 23-25). "[T]he crystal grew in the horizontal direction from the region into which nickel was introduced (the region contacting with an oxide film 51) to the region into which no nickel was introduced." (page 14, line 30 – page 15, line 1). "[C]rystal growth in the horizontal direction." (page 16, line 3). "[T]he present invention allows control of the direction of crystal growth." (page 18, lines 7-8). "[T]he crystals are grown in the transverse direction with the surface of the substrate" (page 24, lines 2-3).
6. The transistor of claim 5, wherein the second source portion comprises a metal advanced crystallization region.	"[A]dvancing the crystallization of the source and drain" (page 2, line 15). As shown in Fig. 1B, the nickel silicide films 17A and 17B only cover the outer portion of the impurity regions 16A and 16B. "[C]rystals are grown in the vertical direction with the surface of the substrate from the lower side of the semiconductor to the upper side thereof or vice versa." (page 24, lines 3-5).
7. The transistor of claim 5, wherein the second drain portion comprises a metal advanced crystallization region.	"[A]dvancing the crystallization of the source and drain" (page 2, line 15). As shown in Fig. 1B, the nickel silicide films 17A and 17B only cover the outer portion of the impurity regions 16A and 16B. "[C]rystals are grown in the vertical direction with the surface of the substrate from the lower side of the semiconductor to the upper side thereof or vice versa." (page 24, lines 3-5).
8. The transistor of claim 5, wherein the source and drain regions are impurity doped.	[A]n impurity was introduced by a plasma doping method. . . . Impurity regions 16A and 16B were thus formed. (page 7, lines 10-15, Figure 1B).
9. The transistor of claim 5, wherein the channel region, the first source portion and the first drain portion comprise the metal advanced	"advancing the crystallization of the source and drain at the same time as the crystallization of the active layer (channel forming region)."

lateral crystallization region,	(page 2, lines 15-17). "The crystal silicon which expands thus from a specific location has a structure close to a monocrystal having good continuous crystallinity." (page 3, lines 23-25). "[T]he crystal grew in the horizontal direction from the region into which nickel was introduced (the region contacting with an oxide film 51) to the region into which no nickel was introduced." (page 14, line 30 – page 15, line 1). "[C]rystal growth in the horizontal direction." (page 16, line 3). "[T]he present invention allows control of the direction of crystal growth." (page 18, lines 7-8). "[T]he crystals are grown in the transverse direction with the surface of the substrate" (page 24, lines 2-3).
the second source region comprises a metal advanced crystallization region,	"[A]dvancing the crystallization of the source and drain" (page 2, line 15). As shown in Fig. 1B, the nickel silicide films 17A and 17B only cover the outer portion of the impurity regions 16A and 16B. "[C]rystals are grown in the vertical direction with the surface of the substrate from the lower side of the semiconductor to the upper side thereof or vice versa." (page 24, lines 3-5).
and the second drain region comprises a metal advanced crystallization region.	"[A]dvancing the crystallization of the source and drain" (page 2, line 15). As shown in Fig. 1B, the nickel silicide films 17A and 17B only cover the outer portion of the impurity regions 16A and 16B. "[C]rystals are grown in the vertical direction with the surface of the substrate from the lower side of the semiconductor to the upper side thereof or vice versa." (page 24, lines 3-5).
10. A transistor comprising:	The present invention relates to a method of obtaining... (thin film transistor or TFT) (page 1, lines 5-8); The TFT . . .was fabricated through the process described above. (page 7, line 32 – page 8, line 1)
a metal advanced lateral crystallization region	"forming regions containing at least one of nickel,... so that they adhere on part of the impurity regions, and by annealing the whole

	to crystallize it starting from the region containing nickel" (page 2, lines 8-11). "advancing the crystallization of the source and drain at the same time as the crystallization of the active layer (channel forming region)." (page 2, lines 15-17). "The crystal silicon which expands thus from a specific location has a structure close to a monocrystal having good continuous crystallinity." (page 3, lines 23-25). "[T]he crystal grew in the horizontal direction from the region into which nickel was introduced (the region contacting with an oxide film 51) to the region into which no nickel was introduced." (page 14, line 30 – page 15, line 1). "[C]rystal growth in the horizontal direction." (page 16, line 3). "[T]he present invention allows control of the direction of crystal growth." (page 18, lines 7-8). "[T]he crystals are grown in the transverse direction with the surface of the substrate" (page 24, lines 2-3).
formed on a substrate	substrate . . . 10 (page 6, line 11).
with a semiconductor material	title; "an amorphous silicon film" (page 6, line 12)
and including a channel region; and	"channel forming region (the semiconductor region under the gate) electrode" (page 8, lines 8-9) (Fig. 1)
a plurality of metal advanced crystallization regions formed on sides of the metal advanced lateral crystallization region with a semiconductor material,	"[H]oles were created on the silicon oxide file 13 on the impurity regions to form nickel silicide (or nickel) films 17A and 17B . . . Then annealing was carried out . . to crystallize the impurity regions 16 and other semiconductor regions." (Fig. 1; page 7 lines 16-22).
wherein at least one portion between the metal advanced lateral crystallization region and one of the metal advanced crystallization regions is located outside the channel region.	"[T]he present invention allows substantial elimination of the grain boundary between the source and drain and the active layer... by advancing the crystallization of the source and drain at the same time as crystallization of the active layer (channel forming region)." (page 2, lines 12-17); "According to the present invention,... the region of the crystal silicon is expanded away therefrom as the starting

	point." (page 3, lines 13-18); "crystal growth advances from both ends of the island semiconductor region and finishes around the middle thereof. Accordingly, no grain boundary was produced in the channel forming region" (page 9, lines 15-19; Fig. 1 and 2(b)).
11. A transistor comprising:	The present invention relates to a method of obtaining... (thin film transistor or TFT) (page 1, lines 5-8); The TFT . . .was fabricated through the process described above. (page 7, line 32 – page 8, line 1)
a channel region;	"channel forming region (the semiconductor region under the gate) electrode" (page 8, lines 8-9) (Fig. 1)
a source region	"the source" (page 8, line 7).
having a source portion adjacent to the channel region; and	"[A] film or the like containing a simple substance of nickel . . .is adhered to the impurity regions . . . and the region of the crystal silicon is expanded away therefrom as the starting point." (page 3, lines 13-18). As shown in Fig. 1B, the nickel silicide films 17A and 17B only cover the outer portion of the impurity regions 16A and 16B. "crystal growth advances from both ends of the island semiconductor region and finishes around the middle thereof. Accordingly, no grain boundary was produced in the channel forming region" (page 9, lines 15-19; Fig. 1 and 2(b)). Thus, any "grain boundary" exists in the source portion and defines the first source portion and the second source portion.
a drain region having a drain portion adjacent to the channel region;	"[A] film or the like containing a simple substance of nickel . . .is adhered to the impurity regions . . . and the region of the crystal silicon is expanded away therefrom as the starting point." (page 3, lines 13-18). As shown in Fig. 1B, the nickel silicide films 17A and 17B only cover the outer portion of the impurity regions 16A and 16B. "crystal growth advances from both ends of the island semiconductor region and finishes around the middle thereof. Accordingly, no grain

	boundary was produced in the channel forming region" (page 9, lines 15-19; Fig. 1 and 2(b)). Thus, any "grain boundary" exists in the drain portion and defines the first drain portion and the second drain portion.
wherein the channel region and at least one of the source portion and the drain portion comprise a metal advanced lateral crystallization region.	"[T]heir direction of crystallization is the same. (page 8, lines 9-10) "advancing the crystallization of the source and drain at the same time as the crystallization of the active layer (channel forming region)." (page 2, lines 15-17.) "The crystal silicon which expands thus from a specific location has a structure close to a monocrystal having good continuous crystallinity." (page 3, lines 23-25). "[T]he crystal grew in the horizontal direction from the region into which nickel was introduced (the region contacting with an oxide film 51) to the region into which no nickel was introduced." (page 14, line 30 – page 15, line 1). "[C]rystal growth in the horizontal direction." (page 16, line 3). "[T]he present invention allows control of the direction of crystal growth." (page 18, lines 7-8). "[T]he crystals are grown in the transverse direction with the surface of the substrate" (page 24, lines 2-3).
12. A transistor comprising:	The present invention relates to a method of obtaining... (thin film transistor or TFT) (page 1, lines 5-8); The TFT . . .was fabricated through the process described above. (page 7, line 32 – page 8, line 1)
a metal-induced lateral crystallization region	"forming regions containing at least one of nickel,... so that they adhere on part of the impurity regions, and by annealing the whole to crystallize it starting from the region containing nickel" (page 2, lines 8-11). "advancing the crystallization of the source and drain at the same time as the crystallization of the active layer (channel forming region)." (page 2, lines 15-17). "The crystal silicon which expands thus from a specific location has a structure close to a monocrystal having

	good continuous crystallinity." (page 3, lines 23-25). "[T]he crystal grew in the horizontal direction from the region into which nickel was introduced (the region contacting with an oxide film 51) to the region into which no nickel was introduced." (page 14, line 30 – page 15, line 1). "[C]rystal growth in the horizontal direction." (page 16, line 3). "[T]he present invention allows control of the direction of crystal growth." (page 18, lines 7-8). "[T]he crystals are grown in the transverse direction with the surface of the substrate" (page 24, lines 2-3).
formed on a substrate	substrate . . . 10 (page 6, line 11).
with a semiconductor material	title; "an amorphous silicon film" (page 6, line 12)
and including a channel region; and	"channel forming region (the semiconductor region under the gate) electrode" (page 8, lines 8-9) (Fig. 1)
a plurality of metal-induced crystallization regions formed on sides of the metal induced lateral crystallization region with a semiconductor material,	"[H]oles were created on the silicon oxide file 13 on the impurity regions to form nickel silicide (or nickel) films 17A and 17B . . . Then annealing was carried out . . to crystallize the impurity regions 16 and other semiconductor regions." (Fig. 1; page 7 lines 16-22).
wherein at least one boundary between the metal induced lateral crystallization region and one of the metal induced crystallization regions is located outside the channel region.	"[T]he present invention allows substantial elimination of the grain boundary between the source and drain and the active layer... by advancing the crystallization of the source and drain at the same time as crystallization of the active layer (channel forming region)." (page 2, lines 12-17); "According to the present invention,... the region of the crystal silicon is expanded away therefrom as the starting point." (page 3, lines 13-18); "crystal growth advances from both ends of the island semiconductor region and finishes around the middle thereof. Accordingly, no grain boundary was produced in the channel forming region" (page 9, lines 15-19; Fig. 1 and 2(b)).
13. A transistor comprising:	The present invention relates to a method of obtaining... (thin film transistor or TFT) (page

	1, lines 5-8); The TFT . . .was fabricated through the process described above. (page 7, line 32 – page 8, line 1)
a channel region;	"channel forming region (the semiconductor region under the gate) electrode" (page 8, lines 8-9) (Fig. 1)
a source region	"the source" (page 8, line 7).
having a first source portion adjacent to the channel region and a second source portion adjacent to the first source portion; and	"[A] film or the like containing a simple substance of nickel . . .is adhered to the impurity regions . . . and the region of the crystal silicon is expanded away therefrom as the starting point." (page 3, lines 13-18). As shown in Fig. 1B, the nickel silicide films 17A and 17B only cover the outer portion of the impurity regions 16A and 16B. "crystal growth advances from both ends of the island semiconductor region and finishes around the middle thereof. Accordingly, no grain boundary was produced in the channel forming region" (page 9, lines 15-19; Fig. 1 and 2(b)). Thus, any "grain boundary" exists in the source portion and defines the first source portion and the second source portion.
a drain region having a first drain portion adjacent to the channel region and a second drain portion adjacent to the first drain portion;	"[A] film or the like containing a simple substance of nickel . . .is adhered to the impurity regions . . . and the region of the crystal silicon is expanded away therefrom as the starting point." (page 3, lines 13-18). As shown in Fig. 1B, the nickel silicide films 17A and 17B only cover the outer portion of the impurity regions 16A and 16B. "crystal growth advances from both ends of the island semiconductor region and finishes around the middle thereof. Accordingly, no grain boundary was produced in the channel forming region" (page 9, lines 15-19; Fig. 1 and 2(b)). Thus, any "grain boundary" exists in the drain portion and defines the first drain portion and the second drain portion.
wherein the channel region and at least one of the first source portion and the first drain portion comprise a metal induced lateral	"[T]heir direction of crystallization is the same. (page 8, lines 9-10) "advancing the crystallization of the source and drain at the

crystallization region.	same time as the crystallization of the active layer (channel forming region)." (page 2, lines 15-17.) "The crystal silicon which expands thus from a specific location has a structure close to a monocrystal having good continuous crystallinity." (page 3, lines 23-25). "[T]he crystal grew in the horizontal direction from the region into which nickel was introduced (the region contacting with an oxide film 51) to the region into which no nickel was introduced." (page 14, line 30 – page 15, line 1). "[C]rystal growth in the horizontal direction." (page 16, line 3). "[T]he present invention allows control of the direction of crystal growth." (page 18, lines 7-8). "[T]he crystals are grown in the transverse direction with the surface of the substrate" (page 24, lines 2-3).